RECEIVED
CENTRAL FAX CENTER
SEP 0 5 2006

AMENDMENTS

CLAIMS:

Please amend the claims as follows:

1. (currently amended) A blood purification system for the effective sterilization of microorganisms, the system comprising at least one light source connected by at least one optical connection positioned to provide a focused, controllable light output to a blood purifier, and a control mechanism, ~~thereby~~ wherein the blood purifier produces ~~producing~~ at least one UV dose zone for the effective sterilization of microorganisms in the blood, and wherein the light source provides a light output with a wavelength approximately between about 250 to about 260 nm.
2. (original) The blood purification system according to claim 1, wherein the light source is a light pump including at least one lamp, at least one optic, a housing, and a power supply.
3. (original) The blood purification system according to claim 1, wherein the light source is at least one lamp.
4. (original) The blood purification system according to claim 3, wherein the lamp is a UV lamp.
5. (original) The blood purification system according to claim 4, wherein the UV lamp is a high-intensity lamp.
6. (original) The blood purification system according to claim 4, wherein the UV lamp is a spectral calibration lamp.

7. (original) The blood purification system according to claim 4, wherein the UV lamp is an electrodeless lamp.

8. (original) The blood purification system according to claim 4, wherein the UV lamp is a mercury halide lamp.

9. (original) The blood purification system according to claim 4, wherein the UV lamp emits light in the UVV and UVC wavelengths.

10. (original) The blood purification system according to claim 4, wherein the light source includes at least one light source optical component positioned to provide a focused, controllable light output to a blood purifier.

11. (original) The blood purification system according to claim 10, wherein the light source optical component is UV transmissive.

12. (original) The blood purification system according to claim 10, wherein the light source optical component is UV reflective.

13. (original) The blood purification system according to claim 10, wherein the at least one light source optical component is selected from the group consisting of reflectors, shutters, lenses, splitters, focalizers, mirrors, rigid and flexible light guides, homogenizer, mixing rods, manifolds and other couplers, filters, gratings, diffracters, gradient lenses, color wheels, off-axis reflectors, cascading reflectors, splitting reflectors, and combinations thereof.

14. (original) The blood purification system according to claim 1, wherein the at least one optical connection is a fiber optic transmission line.

15. (original) The blood purification system according to claim 14, wherein the fiber optic transmission line is removably connectable to the light source and the blood purifier.

16. (previously amended) The blood purification system according to claim 1, wherein the fiber optic transmission line is selected from the group of fiber optic transmission lines consisting of acrylic lines, glass lines, liquid core lines, quartz lines, hollow core lines, core-sheath lines, dielectric coaxial lines, and combination thereof.

17. (original) The blood purification system according to claim 1, wherein the blood purifier includes a dose zone and a housing.

18. (original) The blood purification system according to claim 17, wherein the housing is UV reflective.

19. (original) The blood purification system according to claim 17, wherein the dose zone includes a portal for removable connection to a fiber optic transmission line.

20. (original) The blood purification system according to claim 19, further including at least one portal optical component positioned between the portal opening and the interior of the blood purifier.

21. (original) The blood purification system according to claim 20, wherein the at least one portal optical component is UV transmissive.

22. (original) The blood purification system according to claim 20, wherein the at least one portal optical component is UV reflective.

23. (original) The blood purification system according to claim 20, wherein the at least one portal optical component is selected from the group consisting of reflectors, shutters, lenses, splitters, focalizers, mirrors, rigid and flexible light guides, homogenizer, mixing rods, manifolds and other couplers, filters, gratings, diffracters, gradient lenses, color wheels, off-axis reflectors, cascading reflectors, splitting reflectors, and combinations thereof.

24. (original) The blood purification system according to claim 1, wherein the blood purifier uses enhanced two-dimensional design to improve the blood purification.

25. (original) The blood purification system according to claim 1, wherein the blood purifier uses enhanced three-dimensional design to improve the blood purification.

26. (original) The blood purification system according to claim 17, wherein the dose zone includes a delivery device.

27. (original) The blood purification system according to claim 26, wherein the delivery device includes at least one light emitter selected from the group consisting of side-emitting fiber optic transmission lines, end-emitting fiber optic transmission line, and combinations thereof.

28. (original) The blood purification system according to claim 26, wherein the delivery device is a vertical riser configuration (VRC) in which the blood is moved at a predetermined rate toward the UV light output, thereby producing an increasing UV dose within the blood as it approaches the light output.

29. (original) The blood purification system according to claim 28, wherein the vertical riser configuration system is scalable to applications.

30. (original) The blood purification system according to claim 26, wherein the delivery device is a planar configuration in which the blood is moving at a predetermined rate perpendicular to the UV light output, thereby producing a constant UV dose within the blood as it moves through the delivery device.

31. (original) The blood purification system according to claim 28, wherein the blood purifier is manufactured from a material selected from the group consisting of acrylic, plastic, quartz, glass, and combinations thereof.

32. (original) The blood purification system according to claim 28, wherein the blood purifier is disposable.

33. (original) The blood purification system according to claim 1, wherein at least one interior surface of the blood purifier is a UV reflective surface.

34. (original) The blood purification system according to claim 33, wherein the at least one UV reflective surface is selected from the group consisting of aluminum, stainless steel, and combinations thereof.

35. (original) The blood purification system according to claim 1, wherein the interior of the blood purifier includes at least one interior optical component that is attached to the interior surfaces.

36. (original) The blood purification system according to claim 35, wherein the at least one interior optical component is UV transmissive.

37. (original) The blood purification system according to claim 35, wherein the at least one interior optical component is UV reflective.

38. (original) The blood purification system according to claim 35, wherein the at least one interior optical component is selected from the group consisting of reflectors, shutters, lenses, splitters, focalizers, mirrors, rigid and flexible light guides, homogenizer, mixing rods, manifolds and other couplers, filters, gratings, diffracters, gradient lenses, color wheels, off-axis reflectors, cascading reflectors, splitting reflectors, and combinations thereof.

39. (currently amended) A blood purifier for the effective sterilization of microorganisms in a blood, the blood purifier including a dose zone and housing, ~~thereby producing~~ wherein the dose zone further includes at least one dose region for the effective sterilization of microorganisms in a blood, wherein the light source provides a light output with a wavelength approximately between about 250 to about 260 nm.

40. (original) The blood purifier system according to claim 39, wherein the housing is UV reflective.

41. (original) The blood purifier according to claim 39, wherein the housing includes a portal for removable connection to a fiber optic transmission line.

42. (original) The blood purifier according to claim 39, further including at least one portal optical component positioned between the portal and the interior of the blood purifier.

43. (original) The blood purifier according to claim 42, wherein the at least one portal optical component is UV transmissive.

44. (original) The blood purifier according to claim 42, wherein the at least one portal optical component is UV reflective.

45. (original) The blood purifier according to claim 42, wherein the at least one portal optical component is selected from the group consisting of reflectors, shutters, lenses, splitters, focalizers, mirrors, rigid and flexible light guides, homogenizer, mixing rods, manifolds and other couplers, filters, gratings, diffracters, gradient lenses, color wheels, off-axis reflectors, cascading reflectors, splitting reflectors, and combinations thereof.

46. (original) The blood purifier according to claim 39, wherein the blood purifier uses enhanced two-dimensional design to improve the blood purification.

47. (original) The blood purifier according to claim 39, wherein the blood purifier uses enhanced three-dimensional design to improve the blood purification.

48. (original) The blood purifier according to claim 39, wherein the dose zone further includes a delivery device.

49. (original) The blood purifier according to claim 48, wherein the delivery device includes at least one light emitter selected from the group consisting of side-emitting fiber optic transmission lines, end-emitting fiber optic transmission line, and combinations thereof.

50. (original) The blood purification system according to claim 48, wherein the delivery device is a vertical riser configuration (VRC) in which the blood is moved at a predetermined rate toward the UV light output, thereby producing an increasing UV dose within the blood as it approaches the light output.

51. (original) The blood purification system according to claim 50, wherein the vertical riser configuration system is scalable to applications.

52. (original) The blood purification system according to claim 48, wherein the delivery device is a planar configuration in which the blood is moving at a predetermined rate perpendicular to the UV light output, thereby producing a constant UV dose within the blood as it moves through the delivery device.

53. (original) The blood purification system according to claim 50, wherein the blood purifier is manufactured from a material selected from the group consisting of acrylic, plastic, quartz, glass, and combinations thereof.

54. (original) The blood purification system according to claim 50, wherein the blood purifier is disposable.

55. (original) The blood purification system according to claim 39, wherein at least one interior surface of the blood purifier is a UV reflective surface.

56. (original) The blood purification system according to claim 55, wherein the at least one UV reflective surface is selected from the group consisting of aluminum, stainless steel, and combinations thereof.

57. (original) The blood purification system according to claim 39, wherein the interior of the blood purifier includes at least one interior optical component that is attached to the interior surfaces.

58. (original) The blood purification system according to claim 58, wherein the at least one interior optical component is UV transmissive.

59. (original) The blood purification system according to claim 58, wherein the at least one interior optical component is UV reflective.

60. (original) The blood purification system according to claim 58, wherein the at least one interior optical component is selected from the group consisting of

reflectors, shutters, lenses, splitters, focalizers, mirrors, rigid and flexible light guides, homogenizer, mixing rods, manifolds and other couplers, filters, gratings, diffracters, gradient lenses, color wheels, off-axis reflectors, cascading reflectors, splitting reflectors, and combinations thereof.

61. (previously amended) A method for the effective sterilization of microorganisms in blood, comprising the steps of: providing at least one UV light source connected by at least one optical connection positioned to provide a focused, controllable light output to a blood purifier, and a control mechanism, ~~thereby producing~~ wherein the blood purifier produces at least one UV dose zone for the effective sterilization of microorganisms in a blood; activating the UV light source to output light with a wavelength approximately between about 250 to about 260 nm, passing the blood through the blood purifier, thereby providing sterilized blood.